

CLAIMS

1 – Vertebral osteosynthesis device, comprising bone anchoring elements, such as pedicular screws (1), clips or hooks, one or two connecting rods (2), intended to be connected to said anchoring elements and to be fixed to the vertebrae by means thereof, and connection means (6, 3) of said rod(s) (2) to said anchoring elements (1), at least one of said anchoring elements (1) being of the "polyaxial" type, i.e. comprising an articulated connecting part (6) with respect to the base part (7) of the anchoring device (1) intended to be fixed to the vertebra;

characterized in that said connecting part (6) and said base part (7) each comprise a transversal passage and a rigid transversal part (11, 24) which direction is substantially perpendicular to the direction of said passage, said rigid transversal part (11, 24) of the connecting part (6) or of the base part (7) being inserted in the transversal passage of the base part (7) or of the connecting part (6), and vice versa, in such a way that these rigid transversal elements (11, 24) are pivotable in these passages.

2 – Device according to claim 1, characterized in that said transversal passage and said rigid transversal element (11, 24) of the connecting part (6) or of the base part (7) are made by providing a ring (11) on the connecting part (6) and a ring (24) on the base part (7), the two rings (11) of the connecting part (6) and the base part (7) being inserted into each other similarly to links in a chain.

3 – Device according to claim 1 or 2, characterized in that each rigid transversal element (11, 24) comprises a rounded contact surface with the other rigid transversal element (11, 24), the radius of curvature of said contact surface being greater than the radius of the cross-section of the other rigid transversal element (11, 24).

4 – Device according to claim 1 or 2, characterized in that the anchoring element comprises an intermediate part, inserted between said rigid transversal elements (11, 24).

5 – Device according to claim 3 or 4, characterized in that the rigid transversal elements are made of a hard material with a low friction coefficient, or comprise a coating, or have undergone a treatment enabling them to have a

high hardness and a low friction coefficient on their mutual contact zones, or in that said intermediate part is itself be made of a high hardness and low friction coefficient material.

5 6 – Device according to claim 4 or 5, characterized in that said intermediate part is particularly formed so as to be retained between both rigid transversal elements by means of the shape of said rigid transversal elements.

7 – Device according to one of the claims 1 to 6, characterized in that said "polyaxial" type anchoring element (1) comprises at least one part (16, 37) or portion of a part with an elastically deformable structure, placed, after
10 assembly, between said connecting part (6, 3) and said base part (7), said part (16, 37) or portion or part with an elastically deformable structure enabling mobility of the connecting part (6, 3), and therefore of the connecting rod (2), with respect to base part (7), with damping.

8 – Device according to claim 7, characterized in that said base part (7)
15 comprises a part (16) with an elastically deformable structure and the connecting part (3) comprises another part (37) with an elastically deformable structure, said two parts (16, 37) supporting each other in the assembly position.

9 – Device according to one of the claims 1 to 6, characterized in that
20 said connecting part comprises a curved bearing surface, suitable for resting against a corresponding curved bearing surface of said base part and sliding against said surface during movements of said connecting part with respect to said base part.

10 – Device according to claim 9, characterized in that said connecting
25 part comprises a convex peripheral surface, in the form of a spherical cap, and said base part comprises a corresponding concave peripheral surface.